

Remarks

This amendment has been filed in response to the Office Action issued on April 12, 1999. The Office Action was made Final.

Applicants submit that, in view of the arguments presented below, the invention is novel and non-obvious over the cited art of record. Withdrawal of the rejections and notification of allowability are therefor requested.

Rejections of Record

Claims 36-46 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Heilman, et al (AU 27,337) in view of Konger (U.S. 3,760,154) further in view of Anderson, et al. (U.S. 5,113,479).

Claims 36-46 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting over claims 1, 2, 15, 16, and 19 of copending application no. 08/699,332.

The Present Application

A container cover comprising a heat-shrinkable film is provided which is susceptible to shrinkage at specific locations upon exposure to radiant (IR) energy. The specific locations are formed via incorporation of a material which absorbs the radiant energy. The radiant energy absorbing material is sufficiently opaque to prevent pass through of the IR energy, thereby converting the IR energy to heat energy which causes preferential shrinking of the packaging material at that particular location. Sections which do not contain the IR energy absorbing material do not shrink.

The claims of the present application require a heat-

shrinkable film to be used as covers for open topped containers wherein the film is normally not susceptible to shrinkage upon exposure to IR energy. The film is rendered susceptible to shrinkage at particular locations where shrinkage is desired. In the present application a downwardly extending portion of the cover sized material is imparted with opacity to render the downwardly extending material opaque and thus susceptible to shrinkage.

Provisional Rejection Based on Obviousness-Type Double

Claims 36-46 have been provisionally rejected under the judicially created doctrine of obviousness type double patenting as being unpatentable over claims 1, 2, 15, 16, and 19 of copending application serial no. 08/699,332.

Applicants have now received a Notice of Allowability in copending application serial no. 08/699,332 wherein claims 1-22 were indicated as being allowed over the prior art of record. Upon receipt of an indication of allowable subject matter in the present application, Applicants will review the conflicting claims and provide a terminal disclaimer, if appropriate, to address the obviousness-type double patenting issue.

Rejection Under 35 U.S.C. §103(a)

The Examiner has rejected claims 36-46 under 35 U.S.C. §103(a) as being unpatentable over Heilman, et al. (AU 27,337) in view of Konger (U.S. 3,760,154) further in view of Anderson, et al. (U.S. 5,311,479). The Examiner's reasoning in the Office Action of November 24, 1998, provided at pages 4-5 is as follows:

"Heilman, et al. teach a film which extends over the rim of a container and is heat shrunk onto the container by applying energy which may be in the form of infrared radiation to the edge

first while the top is shielded, then to the top as an option to further tighten the film (page 10). The film may be transparent (page 3). Konger teaches the use of the infrared radiant heat directly on the overhanging edge of a transparent shrink wrap film in order to form a cover over an object to be packaged, the direct radiation on the edge is intense (abstract, col. 2, lines 35-45, col. 6, lines 60-69, col. 10, lines 15-25). Anderson, et al. teach the use of coloring on a edge to better absorb infrared radiation to raise the temperature to heat seal the edge of the film (abstract). The instant invention claims a printed area on the edge rim of a film lid to better absorb radiation in order to heat shrink the film. It would have been obvious to one of ordinary skill in the art to direct the infrared radiation of Heilman, et al. directly on the edge of Heilman, et al. in order to better shrink the transparent edge of Heilman et al. because of the teachings of Konger to use intense direct radiation on overhanging edges to be shrunk. It further would have been obvious to color the edge of the film of Heilman et al. in view of Konger in order to use less intense infrared energy but still cause shrinkage in order to save energy because of the teachings of Anderson et al. that the use of opaque areas increase absorbance of infrared radiation. Use of film in a roll to make lids and printing and use to tint to create opaque areas for infrared absorption are conventional."

Heilman is directed to a device which is similar to the Applicants in that it teaches the use of the heat shrink film to form lids on open topped containers. However, the disclosure of Heilman is quite different from the Applicants claimed invention with respect to the film. In fact, it is submitted that a careful examination reveals that Heilman teaches directly away from the Applicants invention as now claimed.

At page 2, Heilman teaches that "when a piece of heat shrinkable oriented plastic film is subjected to heat of any type, it will shrink and shrivel into an irregular ball-shaped configuration due to its inherent oriented characteristics. However, when the central or interior portion of the film is shielded or otherwise insulated from the direct or indirect influence of heat while the perimeter or rim area is subjected to heat, only the rim area will shrink and will be reduced . . ."

(Emphasis added).

At page 3, Heilman teaches that his invention is to provide a method using a transparent (preferably) heat shrinkable oriented plastic film or sheet. At pages 9 and 10, Heilman teaches leaving the exposed edges of the film exposed to blasts of hot air or steam, or to heat caused by high frequency electricity, electrical resistance, infrared or other heat, supplied to the ring or directly to the film in conventional manner. Later on page 10, the references teaches that:

"Obviously, an oven heated by infrared heat lamps or any other heat would be within the spirit of my invention. The sole consideration is that a shield tightly pressed against the container rim must be provided before the film-covered container enters the heated area so that the skirt of the film will be selectively shrunk first to provide a tight but elastic and flexible edge bead around the container and removably retain the cover on the container. If the shield is not pressed tightly against the container rim, to thereby shield and restrain the entire area within the mouth of the container when the film edges are being heated, no seal will result."

The Examiner has indicated that Heilman teaches application of infrared radiation directly to the edge of the film which extends over the edge of a container to cause shrinkage of the film at page 2, paragraph 2 of the

Office Action. This is simply not the case. At page 5, lines 5-7 of the Office Action, the Examiner admits that Heilman does not explicitly teach direct exposure of IR energy to the edge of the film. As was set forth in the previous response, and even according to the cited text referred to by the Examiner (page 10 of Heilman), infrared radiation is used to cause hot air which shrinks the film. However, a transparent film, alone, will pass infrared energy right through without transforming the radiant energy into heat energy. Thus, in Heilman, an oven type device supplied with infrared energy initially converts the infrared energy to heat which heat, ultimately, initially heats a surface of the transparent shrink wrap film to shrink. In fact, Heilman teaches blocking or covering areas of the film where shrinkage is not desired as the heat, not the IR energy, will shrink all exposed areas of the film. By itself, infrared radiation will not have any effect on the transparent shrink wrap of the Heilman reference film. Because Heilman fails to suggest imparting some opacity to a transparent film, there is simply no mechanism by which radiant energy, alone, would cause film shrinkage.

In summary, although Heilman suggests use of infrared radiation, he only teaches radiation as the heating mechanism of an oven. Thus, Heilman teaches using this as a heat source for heating air, not the film. This is confirmed by the teaching that transparent film is preferred. Transparent film is not directly heated under infrared radiation since the radiation will passes unimpeded through transparent film. That Heilman means to only the heat air is also confirmed, because Heilman teaches that a top shield is essential. A top shield is only essential with a with a diffuse heat source, such as hot air. There is simply no teaching in this reference of using an infrared radiation source as a way of transmitting energy directly to the film. In fact, Heilman teaches away from using the energy source in this way,

with its references to "hot blasts", transparent film and the necessity of a top shield.

The Examiner, recognizing some deficiency in the Heilman reference with respect to the select opaque surfaces of the presently claimed invention, has cited Konger for teaching the use of infrared radiant heat directly on an overhanging edge of a transparent shrink wrap film in order to form a cover over an object to be packaged. The direct radiation is disclosed as being intense.

Contrary to the Examiner's assertion, while Konger does indicate that infrared radiant heat is utilized to shrink a transparent plastic film, it is important to recognize that the infrared radiant heat is generated in conjunction with a **heat tunnel or oven**. This is necessary in that infrared radiation, by itself, does not affect the shrinking of transparent film absent some absorbing medium which generates heat. Konger utilizes the heat from the oven to effectuate the shrinkage of the transparent film not infrared radiant energy alone. The Examiner appears to be of the opinion that when Konger refers to infrared heat to shrink the film, that the infrared energy is the same as infrared heat. However, this is an incorrect interpretation. Quartz tubes in Konger generate infrared energy to a heat tunnel or oven which produces infrared heat, said infrared heat thereby causing the film shrinkage. No teaching of modification of the film to allow infrared energy, alone, to effectuate shrinkage is presented in Konger. The present technique avoids the need for a separate heat generating mechanism when shrinking transparent film in a predetermined, preferential manner.

The present application effectuates preferential shrinkage by selectively forming opaque sections on film which is normally not affected by radiant energy so as to impart preferential shrinkage at the opaque locations. No mechanism for preferential shrinkage is suggested in Konger which eliminates the need for a reflective-type

oven device. Thus, contrary to the Examiner's assertion, Konger fails to remedy the deficiencies of Heilman in teaching a modified heat-shrinkable film which is capable of preferential shrinkage in a predetermined manner. As such, there is simply no motivation in the art for directing infrared radiation onto the edge of a film for a lid to effectuate preferential shrinkage in a determined manner.

The Examiner has again relied on Anderson, et al. for teaching the use of colored material on the edge of a thermoplastic film to better absorb infrared radiation along the edge in a heat sealing process. However, Anderson differs from the present claims (and from Heilman) in a materially significant way. Anderson is concerned with applying infrared radiation to a specific location on an entirely opaque material (a package). The infrared radiation is directed to particular spots via reflectors to avoid heating (and subsequent melting) of the entire surface of the thermoplastic material. Various portions of the thermoplastic laminate may be preprinted with a colored strip to enable less infrared radiation to be used when heating the material.

Thus, a critical difference in Anderson is that Anderson does not concern transparent shrink wrap technology at all. Anderson is concerned with melting (as opposed to shrinking) a thermoplastic laminate on a packaging material at specified locations to enable welding on a packaging material. The colored markings are optional in Anderson as the entire laminated material is opaque and thus able to generate heat when supplied with radiant energy. None of the problems associated with shrink wrap technology are addressed by Anderson as Anderson is concerned with an entirely different problem. Anderson limits the exposure area of the infrared radiation which converts radiant energy to heat. Applicants have done exactly the opposite. Applicants have increased the area of a transparent shrink wrap film

which converts radiant energy to heat energy. This is clearly not taught nor suggested by Anderson, either alone or in combination with Heilman and/or Konger.

As such, the Examiner has provided no motivation to combine the teachings of the cited art. When considering the teaching of a particular reference, it is the teaching of the reference, as a whole, which must be considered. It is not proper for the Examiner to "pick and choose" selected portions of the cited art and, with the benefit of the Applicants disclosure, render the claims obvious. The teachings must be viewed in their entirety, including any teaching away from the invention. In the present case, the Examiner has simply ignored the overall teaching of the references and merely combined the unrelated art using the present disclosure as a motivation to do so.

Even assuming, for arguments sake, that the Examiner's combination is proper, it is respectfully submitted that Applicants invention is not a mere obvious combination of the teachings of Heilman, Konger and Anderson. In the Applicants respectful submission, a person of ordinary skill in the art would not be motivated to combine Heilman, Konger and Anderson, because the teachings of Anderson are redundant to Heilman and Konger. Heilman, for example, teaches that it is essential to control the top shrink of a shrinkable film. In light of this, the teachings of Anderson, even if applicable (which is not admitted since Anderson teaches heat welding plastic and has nothing to do with heat shrinking), are redundant to Heilman. Why would a person of ordinary skill in the art combine heat concentrating strip of Anderson to over come a problem already clearly overcome by Heilman by using a top shield? There is simply no motivation provided in the art for a person skilled in the art to make the Examiner's combination. The problem addressed by Anderson is already adequately solved by Heilman. It is only with the benefit of Applicants disclosure that the Examiner has made the combination, having already understood and

recognized the benefits of the Applicants idea. In the Applicants respectful submission, the standard to be applied is not could the references be combined in the way the Examiner has, but would they have been so combined by a person of ordinary skill in the art using motivation provided by the art? A person of ordinary skill in the art would recognize that Heilman teaches a complete solution for shrinking the downwardly extending film, by shielding the top. In this context, such a person would not need the concentrating advantages taught by Anderson. Thus, there is simply no basis for holding that a person would make the combination, absent the Applicant's own disclosure.

The Applicants were first to realize the benefits of adapting a heat shrinkable film to directly absorb radiant energy such as infrared energy, instead of using the same indirectly to heat the air, which then impinges on the film as taught by both Heilman and Konger.

In view of the foregoing, the Applicants submit that the invention as presently claimed is not obvious in light of either Heilman, Konger or Anderson, whether taking singly or in combination as the Examiner has suggested.

Allowability of Copending Application 08/669,332

Applicant would like to again point out that claims 1-22 of copending application serial no. 08/669,332 were recently allowed. Given that the art cited in the present application was cited in the copending application and the claims held allowable thereover and given that the present application currently has a provisional obviousness-type double patenting rejection over the independent claims of 08/669,332, Applicant respectfully requests that the Office Action be consistent in the decision regarding the copending applications.

Specifically, if the claims of the present application are held to the obviousness-type double

patenting rejection over allowed claims 1-22 of 08/669,332, then the prior art rejection under 35 U.S.C. §103 should be withdrawn. Conversely, should the Examiner maintain that the rejection under 35 U.S.C. §103 is proper, which Applicant clearly submits is not the case, then the provisional obviousness-type double patenting rejection should be withdrawn.

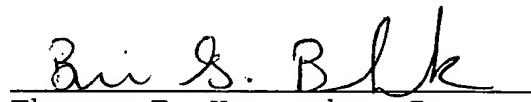
Additionally, as a matter of interest, the Applicant notes that claims of the same scope in the present application were found to include both the required novelty and inventive step under CH II Preliminary Examination in the Patent Cooperation Treaty Application.

Conclusion

Based on the arguments presented above, Applicants respectfully request reconsideration of the claims and notification of allowability of all the claims. Should any issues remain unresolved, the Examiner is encouraged to contact the undersigned in an attempt to resolve an such issues.

Respectfully requested,

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